June 7th in class M.C. Test
(Questions directly from Regents)

June 14 @ 12:00 Regents Exam

0616

#1 $b>0$ $d>0$

$(3b)^{\frac{2}{d}}$ ← power, ← root $= \sqrt[d]{(3b)^2}$ OR $\left(\sqrt[d]{3b}\right)^2$

(4)

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2) $\frac{\text{Sum}}{\text{Total \#}} = \text{Average}$ Let T = # of remaining test

$$\frac{85+85+85+93T}{3+T} = 90$$

$$\frac{255+93T}{3+T} = 90$$

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3) $(2-yi)^2 \longrightarrow (2-yi)(2-yi)$

$4-2yi-2yi+y^2i^2$

$4-4yi+y^2(-1)$

$4-4yi-y^2$

$-y^2-4yi+4$ (2)

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11) R = Probability it rains

S = Probability Sean pitches

$P(S)=.5$ $P(R)=.4$ $P(R|S)=.40$

(1)

Probability has not changed with given condition

Therefore the events are Independent

- Mutually exclusive means that if one result happens the other Can not!

0817
#4

$\sqrt{x+14} - \sqrt{2x+5} = 1$

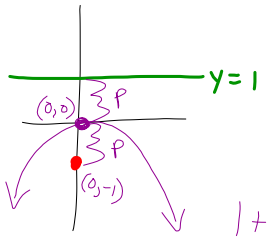
* Plug in the choices.

(2)

* (6) focus: $(0,-1)$
directrix: $y=1$

$y-k = \frac{1}{4p}(x-h)^2$

$(h,k) \rightarrow$ vertex



p = half the distance from focus to directrix

$\frac{1+-1}{2} = 0$

Vertex $(0,0)$

$y-0 = \frac{-1}{4(1)}(x-0)^2$

$y = \frac{-1}{4}x^2$

$-4y = x^2$

(2) Choice

$p = \frac{1-(-1)}{2} = \frac{2}{2} = 1$

(9)

base, answer, exponent

$\log_{0.8}\left(\frac{V}{17000}\right) = t$

re-write in exp form

$.8^t = \frac{V}{17000}$

Bought June 2011

2012 – 2014
$t=1$ $t=3$

AROC

$\frac{\Delta y}{\Delta x} = \frac{\Delta V}{\Delta t}$

$(17000)(.8^t) = V$

$17000(.8^1) = 13600$

$17000(.8^3) = 8704$

$\frac{13600-8704}{1-3} = \frac{4896}{-2} = -2448 \approx 2450$

Choice (3)

0817

#10

$A = 100\left(\frac{1}{2}\right)^{\frac{1t}{73.83}} = 100\left(\left(\frac{1}{2}\right)^{\frac{1}{73.83}}\right)^{t}$

Choice (3)

$= 100(.9906)^{t}$

#8 $P(m) = (m^2-4)(m^2+1)$

$0 = (m^2-4)(m^2+1)$

$= (m-2)(m+2)(m^2+1)$

$m = 2 \mid m = -2 \quad m = \pm i$

Choice (4)

$m^2 + 1 = 0$

$-1 \quad -1$

$m^2 = -1$

$m = \pm\sqrt{-1}$

$m = \pm i$

HW: 0816 #1-37

Test Thursday 6/7

18 M.C.

0817
#33

$$\frac{3p}{p-5} - \frac{2}{p+3} = \frac{p}{p+3}$$

LCD $(p+3)(p-5)$

$$3p(p+3) - 2(p-5) = p(p-5)$$

$$3p^2 + 9p - 2p + 10 = p^2 - 5p$$

$$-p^2 \quad +5p \quad -p^2 + 5p$$

$$2p^2 + 12p + 10 = 0$$

$$2(p^2 + 6p + 5) = 0$$

$$2(p+5)(p+1) = 0$$

$p = -5 \quad p = -1$

0817
#26

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

$$P(\text{Drug and Well}) = .40$$

$$P(\text{Well} \mid \text{Drug}) = \frac{P(\text{Drug and Well})}{P(\text{Drug})} = \frac{.40}{.50} = .80$$

(Well | Drug: Well is given; Half got drug)

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

(A ∪ B: OR; A ∩ B: and)

08 17
#19

$2x - y = 4 \Rightarrow 2x - 4 = y$

$(x+3)^2 + (y)^2 = 8$

$(x+3)^2 + (2x-4)^2 = 8$

$x^2 + 6x + 9 + 4x^2 - 16x + 16 = 8$

$-8 \quad -8$

$5x^2 - 10x + 17 = 0$

Discriminant
$b^2 - 4ac$
describes the roots

$(-10)^2 - 4(5)(17)$

$100 - 340$

-240

imaginary

0817
#23

$$\left(\frac{-54x^9}{y^4}\right)^{\frac{2}{3}} \qquad \frac{(-54)^{\frac{2}{3}}(x^9)^{\frac{2}{3}}}{(y^4)^{\frac{2}{3}}} = \frac{(-54)^{\frac{2}{3}}x^6}{y^{8/3}}$$

$\sqrt[3]{(-54)}$ (2)

$\sqrt[3]{-27}$ $\sqrt[3]{2}$

-3

$$\left(\sqrt[3]{-54}\right)^2 \Rightarrow (-3)^2\left(\sqrt[3]{2}\right)^2 = 9\sqrt[3]{4}$$

$$\sqrt[3]{2^2}$$

$$= \frac{9x^6\sqrt[3]{4}}{y^{8/3}}$$

$$y^{8/3} = \sqrt[3]{y^8}$$

$\sqrt[3]{y^6}$ $\sqrt[3]{y^2}$

y^2 $\sqrt[3]{y^2}$

$$\frac{9x^6\sqrt[3]{4}}{y^2\sqrt[3]{y^2}}$$ (4)

0816

#26 $\left(3^{\frac{1}{5}}\right)^2$ $\sqrt[5]{9}$

$3^{\frac{2}{5}}$

$\sqrt[5]{3^2} \rightarrow \sqrt[5]{9}$ ✓

0816

#6 $R(t) = -33t^2 + 360t$

$C(t) = 700 + 5t$

$R(t) \geq C(t)$

$-33t^2 + 360t \geq 700 + 5t$

$0 \geq 33t^2 - 355t + 700$

GOLI

$t = \frac{-(-355) \pm \sqrt{(-355)^2 - 4(33)(700)}}{2(33)} \approx 2.6$ and 8.16

between

$t = 8$ is the highest

(3)

0816
#9

$A_n = A_1 r^{n-1}$

$A = P(1+r)^t$

$+10\% \longrightarrow 110\%$ every week

week 1 = 8 miles

6 week program

$= 8(1.10)^n$

$\sum_{n=1}^{6} 8(1.10)^n$ ← using this

8.8 ← First week

0816 #9

8 (week 1) $\times 1.10$ → 8.8 (wk 2) $\times 1.10$ → 9.68 (wk 3) $\times 1.10$ → 10.648 (wk 4) $\times 1.10$ → 11.7128

$\times 1.10$

12.88408

0816 #7

	0-10	11-50	Over 50
15-18	4	37	68
19-22	6	26	87
23-60	25	47	157

"given" only look @ 23-60

Total of age 23-60

$25+47+157=229$

$\frac{157}{229}$ (1)

0816 #1

Choice #1 and #3 both cross x-axis therefore roots are real.

#2

x^2+2x+2

$x=\frac{-2\pm\sqrt{2^2-4(1)(2)}}{2(1)}$

$=\frac{-2\pm\sqrt{-4}}{2}$

$=\frac{-2\pm 2i}{2}=-1\pm i$

#4

x^2-2x+2

$x=\frac{-(-2)\pm\sqrt{(-2)^2-4(1)(2)}}{2(1)}$

$=\frac{2\pm\sqrt{-4}}{2}$

$=\frac{2\pm 2i}{2}=1\pm 1i$ ✓ (4)

08 16
#4

mean = 1450

$\sigma = 8.5$

between: 1440 – 1465

Calculator

norm cdf

lower = 1440

upper = 1465

$\bar{x} = 1450$

$\sigma = 8.5$

$\approx .8415$ (3)